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Neglected productive skills in content-based classes

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Abstract

The dilemma between Content Based Instruction (CBI) and other forms of content teaching with/through/in a foreign language is not yet over. This qualitative study initially aims to provide an overall picture of CBI implementation in Turkey. The data were collected through sitting in content classes and laboratory work courses, observing as non-participant researchers and interviewing the course instructors in Faculty of Science and Arts. The findings revealed that though classes were instructed and the written exams were given in English; the students were reluctant to participate in classes in the target language and their written responses are limited as well.

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1. Introduction

The purpose of this study is to describe the implementation of Content-based Instruction at the Faculty of Arts and Sciences (FAS) in a state university in Turkey. It aims to observe and identify foreign language skills of students, majority of whom graduated from the Preparatory School, studying at the Faculty of Arts and Sciences in content-based classes. This research, also, attempts to explore the perspectives academic teaching staff have on the implementation of Content-based Instruction (CBI).

The need for this study emerges from the lack of literature conducted on CBI in higher education in the Faculty of Arts and Science in Turkey, specifically from the teachers' point of view and the professional experience as well as reflection of the researchers. The study will contribute in illustrating the foreign language use levels of FAS students as well as enabling the opportunity for teachers to self-

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reflect on their practices. To the administrators, the study will form a baseline to see the current situation and needs of the programs in relation to foreign language instruction and use.

1.1. Content-based instruction

Stryker and Leaver (1997) defined ‘content-based instruction (CBI)’ as a philosophical orientation, a method, a syllabus design when it is for a single course or as a framework when for the whole instructional program. It is basically the integration of content and language. CBI is a systematic approach to teach selected content teaching based on learners’ needs and interests as well as their learning styles.

CBI has been practiced in a variety of language programs ranging from vocational schools, immersion programs to English for Specific Purposes classes. It is widely used when there is a crucial need to teach both the content and the language in an efficient and fast mode. The theoretical assumption of CBI gets support from second language acquisition theory by Krashen (1982) along with Swain and Johnson (1997). The hypothesis that language is best acquired incidentally through exposure to extensive and meaningful input forms the basis for the use of CBI. Students are given many opportunities to process comprehensible input and rehearse in CBI classes (Lantolf & Pavlenko, 1995). It is very important in second language acquisition to provide students with the opportunities of interaction with teachers and peers as well as the strategies and content in continuing phases to enhance both the input and practice (Lantolf, 2000). CBI classes seem to enrich language learning with scaffolding and meaningful activities on basic language skills through real life examples and situations using authentic materials.

The basic features of CBI are the use of content language as the medium of instruction, the use of authentic materials and the delivery of content in a meaningful context. According to the priority given to language teaching content based classrooms fall into four categories with a varying degree of focus and content: immersion, sheltered, adjunct, theme-based classes. Theme-based model is the most language focused and widely referred one, while all modals aim to teach language implicitly by providing extensive input and opportunities to practice (Davies, 2003).

CBI, also, facilitates cooperative learning while not avoiding individual work and personal meta-cognitive strategies (Crandall, 1993). Crandall (1993) suggested that CBI lends itself to cooperative learning which shows improved learning results. The content component of a content based classroom provides coherent material which leads to the integration of strategy instruction and recycling with language teaching and learning (Brown, Pressley, Van Meter, & Schuder, 1996).

CBI is greatly used in higher education, as well, with the raising importance of learning a second language and the fact that English stands as the lingua franca. Coleman (2012) stated that use of English as the means of instruction in higher education, initially in graduate classes later on undergraduate studies, has increased in the last fifteen years. He suggests that some problems could arise due to the lack of qualified staff and materials. Moreover, he adds up the dimension of students by stating that they might be unwilling to participate as CBI might be demoralizing at the initial stages. There are many studies which prove CBI a promising way of delivering both content and language all around the world (Srole,

1997; Sagliana, Stewart, & Sagliano, 1998; Schreppegrell, Achugar & Oteiza, 2004; Shamsudin & Nesi, 2006; Fernandez, 2009).

1.2. Content-based instruction in Turkey

There are 170 universities in Turkey (YÖK, 2012). Although the majority of them are state universities, there are a good number of private or foundation universities. However, only a couple of them use English as a medium of instruction. There are three types of universities in Turkey in regard to English as a medium of instruction: universities that use English as a medium of instruction in all their academic programs, universities that use English as a medium of instruction in some of their academic programs, universities that use only the native language in all their academic programs. Middle East Technical University and Bosphorus University are the major state universities which use English as a medium of instruction in all their academic programs. The university where the research took place falls into the second category as it carries out the classes in English only in some programs in the Faculty of Arts and Sciences. The Faculty of Arts and Sciences has 2669 students at 10 departments ranging from Sociology to Physics (AIBU, 2012). Attending to Preparatory School is mandatory for the students of Physics, Chemistry, Biology and Mathematics departments as these are the programs offered in English.

1.3. Research questions

This study seeks answers to the following research questions:

- i) How is CBI implemented in Faculty of Arts and Science programs?
- ii) What are the teachers' perspectives about language use and skills in CBI classes?
- iii) What are the teachers' expectations about language use and skills in CBI classes?

2. Methodology

This qualitative study uses a naturalistic inquiry research design (Cohen, Manion & Morrison, 2007) in which observations took place in their real-life settings and observers stayed as non-participants. In addition, interviews with open-ended questions were conducted in the offices of teachers where they were considered to be comfortable during their preferred time slot.

2.1. Data collection procedure

Data of this study were collected through semi-structured lesson observation and semi-structured interviews. Two laboratory lessons and two content lessons were observed. To minimize the subjectivity element, the two researchers observed the classes at the same time by filling out the observation checklist separately. Both observations and interviews were videotaped, transcribed and coded by the two researchers. For the reliability issues, the transcriptions were coded separately. Both researchers had the chance to interview teachers depending on their availability and some incidental interview questions emerged during the interviews accordingly. Furthermore, necessary official permission was received from the Faculty of Arts and Science Dean's Office at the initial stage of the study.

2.2. Participants and setting

Nine teachers from the programs of Biology, Chemistry, Mathematics and Physics were interviewed. Seven of the teachers are male whereas two are female. The years of experience varies from 6 to 22. Two

of the participants have been lecturing content for the last two years; however, worked in the laboratories as research assistants beforehand. The data were collected during the Spring 2012 semester at the Faculty of Arts and Science of a mid-size university located at the north-west part of Turkey.

2.3. Data collection instruments

Semi-structured interviews with nine teachers were conducted to determine the teacher experience, perspectives and expectations. Additionally, two content lessons and two laboratory lessons were observed to see how CBI is implemented in the classes. Interviews have been conducted with randomly selected teachers, that is, by visiting all the offices and asking for an appointment with the available and volunteer teachers. The interview questions (see Appendix A) were prepared having adapted some of the questions from the CBI studies of Pessoa, Hendry, Donato, Tucker and Lee (2007) for teachers and the final project of Eyjólfssdóttir (2011) for 3rd and 4th year undergraduates and non-native teachers.

3. Findings and Discussion

3.1. Lesson observation

Classes from the Biology program were observed by the researchers as non-participant observant. A first year General Biology laboratory class, a second year Plant Diversity class and finally a fourth year Molecular Ecology class were observed and video recorded. The rationale behind observing Biology lessons is the relative frequency and amount of foreign language use in contrast to other programs (eg. Maths) where there is more numerical formulaic language. The semi-structured nature of observations led to filling out the checklist and adding notes about classroom language where necessary. During the observations, three main issues parallel to the teacher interviews stood out.

3.1.1 Language use

In all the classes, it is observed that teachers mainly used English (L2) as a means of instruction. The lesson structure could be identified as two stages: summary of the previous class and lesson delivery stage. The real English language practice is mostly observed in the lesson delivery stage. All the teachers observed tended to switch to Turkish to summarize the points one more time mainly for comprehension reasons. Moreover, as listed in the study by Jingxia (2010) teachers switched code to emphasize some points. Nonetheless, it is observed that students took more notes during this summary process and they tended to address their questions mostly in Turkish (L1) at this stage. Teachers tended to check for students' comprehension of the content constantly by asking frequent comprehension questions and by simply asking whether they understood or not. When the teachers could not get any answers out of the students, they switched to Turkish to go over the same topic one more time but yet a little more briefly.

There were a few foreign students (visiting Erasmus exchange students and some full-time registered international students) in all the classes that were observed. It might be plausible to deduce that teachers paid more attention to lesson delivery in English because of their presence, which would be a sensible considering the teachers responses in the interviews. The questions asked by the Turkish students were translated to English by the teachers immediately after L1 use. A somewhat similar usage of first language switch has been observed by Nikula (2010) in Finland. It is suggested in the study that teachers often tend to code-switch between first language and target language.

Another important point which was noticed during the observations was that teachers gave extra importance to the delivery and explanation of theoretical points in English, which is again consistent with the answers, which was mentioned in the interviews. Moreover, it was seen that terminology was explained in English through morphological analysis. Teachers explained the roots and affixes of the content vocabulary encouraging the students to do the same so that students could carry same kind of analysis later on autonomously. For instance, while explaining the word “peat lands” the teacher first illustrated the concept by drawing its picture on the board. Afterwards, she wrote “wet” as the semantic feature of the word, gave an example from the local area. Finally, she switched to Turkish to give the Turkish equivalent and reported an anecdote.

Laboratory classes had, on the other hand, a very different procedure than the theoretical classes did. They were considered as the continuum of the theory classes and had a more hands-on procedure. Each class started with students’ submitting lab reports as groups on the previous experiment which had been carried on. Afterwards, students were given a five- minute quiz before beginning the new topic. In one of the classes, while an assistant were dictating the questions he had to spell the word in L2 and give Turkish translation to make it clear.

It was observed that lab classes were delivered by assistants through team teaching who were attentive to students’ needs one to one. There was a more close relation between the teachers and the students in the laboratories as each student was responded personally and their questions were answered without any delay. The laboratory classes can be divided into three sections as in revision, theory instruction and the experiment. Explanation of the theory was carried out mainly using the board by the assistants in English but important points were summarized in Turkish, as well. Furthermore, the stages of the experiment were carefully instructed to groups, and then, they were asked to proceed at their own speed. The experiment stage was hardly carried in English as students and teachers interacted mostly in L1 asking and answering questions about the procedure of the experiment and the results. Teachers always addressed the foreign students in English and they tended to group them together.

3.1.2. Language skills

As the materials and most of the lesson delivery were in English, it was observed that receptive skills were made use of by the students, which displays similar results with the teacher interviews. All the materials from explanations on the board to presentations and teacher notes were in English. Students had to read a lot. As the classes were mainly in English, it can be concluded they practiced listening and note taking, too.

However, the only writing they did was for the exams and lab reports, which made the practice of writing quite limited and unsatisfactory. Lab reports are written together by a group of students mostly copying the procedures of the experiment of the day. Students make use of the notes they took during the experiment in class to compose their lab reports. The reports mostly consist of tables and graphics and their explanations underneath, which reduces the amount of writing practice even more.

Speaking could be referred to as the most neglected skill in the classrooms as the observers barely observed students speaking in English. They preferred answering to the teachers’ questions in English only if they could be answered in one or two words. It was seen that they preferred switching back to Turkish to give longer answers even if the questions asked were always in English. Moreover, students

seemed to lack confidence in speaking in English as even if they attempted to ask or answer a question in English by forming a full sentence, they gave up the trial quickly and got back to the safer zone of Turkish.

Although the students clearly had problems with speaking in English, teachers did not seem to force or encourage students to try to talk in English. Comments were accepted by the teachers as long as they made sense regardless of the language mode. Especially the laboratory classes seemed like a big opportunity for students to practice by interacting to teachers and to their peers in English as there is realia and hands on action already included to make things a little easier and closer to real life experience. All in all, the practice suggests that the primary importance is given to the comprehension of the content not to the acquisition or practice of the language itself.

3.2. Teacher interviews

Teachers (n=9) working for the departments of Physics, Chemistry, Mathematics and Biology were asked 14 questions in relation to their academic background on learning and teaching through English, source and target language use in the classroom, students' perceived language proficiency level and their perspectives about teaching content through foreign language. All interviews, except for one, were videotaped and transcribed for detailed analysis.

Teachers, in this study, are coded to better report from each department using the initials of their programs (M, P, B, C): M1 refers to first teacher interviewed from the Mathematics program, P2 is the second teacher from the Physics program and the others are grouped as B (n) and C (n).

The introductory part of the interview is about the academic background of the teachers. Most of the teachers either studied or participated in training abroad. All stated to have learned English during their undergraduate studies especially at the first year of study, that is, the intensive English instruction of preparatory year. A few of them (n=3) pursued undergraduate studies in Turkish and started learning English at the preparatory classes before their graduate studies. All graduate studies were in English.

3.2.1. Language use

As regards the language use in the classroom, teachers showed similar tendencies in some points like switching to L1 when students are lost but also some differences such as their approach to language instruction integration. All teachers stated that they used to speak more in L2, though their current estimated percentage for target language use in the classes ranged from 80 to 90. As C1 and C2 are inexperienced in teaching and lecturing (2 years of experience), they are not expected to utter such a statement. A powerful factor increasing the L2 use is Erasmus students with whom the language of communication is English. This factor has frequently led the teachers to re-explain occurrences of L1 in English.

Teachers varied in their approach to use of English in class. C2 used to believe that the courses should be in L1 when he was an undergraduate student; however, lack of resources in L1 and getting to know the science world closer, he has changed his mind and started supporting the idea of instruction in L2 for the benefit of students. Similarly, as an experienced teacher in practice, M1 expressed that he has been having difficulty while lecturing in L1 as he is so much used to the terminology and content in English. He added that the courses should be delivered in English without any compromise; however, some challenging

topics could be briefly summarized in L1 when necessary. To him, if a student does not understand the content in L2 s/he is unlikely to understand it if it were delivered in L1 as uttered in the same way by the C3. Another teacher, P1 pointed out his approach to difficult concepts and stated:

If the concepts are too abstract and challenging, students can lose their concentration if the instruction is in L2. If students ask for an explanation or revision in L1 in class or during the exams I do not hesitate to switch to L1. They are allowed to answer my questions orally in class or written in exams in Turkish to make the content comprehensible.

Jiménez Catalan and Ruiz de Zarobe (as cited in Ruiz de Zarobe, 2007:8) revealed in their study in Spanish context that university students find content knowledge through English more difficult, yet they suggested that the same information would be difficult even in their L1. They argued that some text types and genres may be intrinsically challenging irrespective of the means of instruction.

On the other hand, B1 stated that if the content was delivered in L2 students could be more motivated and attentive to get the meaning in the foreign language and not to lag behind. The way he approaches the language issues are more language-focused. For instance, when students make pronunciation mistakes he immediately corrects unlike the other teachers. Additionally, he pays particular attention to vocabulary teaching mainly through morphological analysis; analyzing the affixes of the words similar to B2. Accordingly, Smith (2004, as cited in Coleman, 2012:7) argues that the gains of studying through an additional language are far more than those its losses. He suggests that CBI increases student motivation; thus, the time allocated to study.

Furthermore, P3 and C2 takes the attention to laboratory courses where all classroom language and student talk is in L1 except for the teacher instruction. P2 singles out with his code switching especially for the terminology in English. His anecdote was about the time when students could not understand him while he was speaking in Turkish but mixing codes. Students could not tell the language of the sentence. Besides, a written example for code-mixing is the exam papers where sometimes students write sentences mixed in L1 and L2. The example from C2 is striking: “Substance şu şekilde çözülür (verb 3).” (Substance is dissolved in this way.) where the student also displayed his knowledge of grammar and metalinguistic awareness; he is attentive to the usage but could not succeed using it correctly.

An interesting quotation from most of the teachers is “I switch to Turkish when students start staring blankly.” As it is stated by Sert (2005) one reason for teachers’ code-switching is to make the meaning clear while delivering the content. This statement also reminds us the importance of comprehensible input in the classroom without which learning would not be possible according to Krashen (1982). The preferred way of interactional modification is to summarize the content in L1 or ask comprehension questions while sometimes paraphrasing (Long, 1983 as cited in Lightbrown & Spada, 1999). Finally, C2 reflecting on his very early lessons, reported students’ reaction and change in their faces about the L2 instruction with their question “Will you teach in English?”.

3.2.2. *Language skills*

Teachers were asked which language skills of students need to be developed and how, their observation about the skill development throughout the grades and related suggestions. This section aims to visualize the student performance from the teacher’s perspective.

Firstly, M1 underlined the need for developing deduction, listening and writing skills of students while he mentioned the stability in speaking skills. He believes that students can easily handle their speaking skills at least with 150-200 words. Moreover, by the time students reach the 4th grade their English has evolved accordingly. P1 elaborated the continuum and differences between grades as: “First graders are enthusiastic and they do not generally complain about language use in the class. The complaints peak during the third grade and decreases in time by the time they graduate.” P3 and C1 support this observation adding that fourth graders get used to it and stop complaining.

B1 believes that teaching content through English is a positive factor affecting students’ proficiency levels. On the contrary, P1 expresses a strong opposition to the contribution of CBI to students’ proficiency levels. And if so, he stated to be more interested in the content not the language component of the classes. Similar results are gathered from Diaz and Porto Requejo’s study (2008) in Spain, where they conducted a research on teachers’ beliefs on bilingualism and CLIL. They report that teachers have high expectations of using English as the means of instruction in facilitating second language acquisition.

As a final point, all teachers sequenced the skills students are good at as; reading the most successful, listening writing and speaking as the least successful. Speaking skills is observed to be the most problematic skill as students resist talking in L2 mainly due to their self-confidence and fear of making mistakes. In a similar way, Llinares and Whittaker (2010) pointed out in their study in History class in Spain that writing improves better than speaking in the CBI group that they have worked with. Students only participate in lessons by asking questions which is a rare occurrence and that is in L1. Students’ language production is limited to answering questions with minimal output such as “Yes” or “No” or simply nodding their head. Finally, a distinct comment by P1 gives a general idea about the proficiency levels: “Neither we (teachers) nor they (students) know what they exactly know.”

3.2.3. Teacher expectations

Teachers seem to have a general concern about the foreign language use in the classes; nevertheless, they do not take any specific action to have their students practice more. Some of the teacher expectations about the student learning are as following: M1 and C1 value reading and listening comprehension most and address the necessity of note-taking skills to get the most out of the classroom. P1 holds the view that students should freely talk in any language they feel comfortable with and states no foreign language-related expectation. Moreover, P3 expects to see better written English in the lab reports. Finally and simply put, most teachers expect and wish students asked questions in L2.

Last but not the least, teachers are willing to cooperate with language instructors offering general English courses both at the preparatory classes and the first year of the programs. Several suggestions stressed the need for language training including terminology related vocabulary teaching, academic writing skills for lab reports and reading comprehension strategies. Instructing as visiting lecturers or participating in the oral proficiency exams at preparatory classes believed to be both supportive and motivating.

4. Conclusion

The study reveals that though teacher beliefs, perspectives and practice vary in the language use, language skills and expectations, CBI seems to be a preferred means of delivering the science content.

Science topics are assumed to be especially more convenient as the terminology and resources are mainly in L2.

As for the relationship between perceived achievement and language choice in the classroom, based on the findings it can be stated that the language does not dramatically influence the learning process. Two comments could be referred; firstly, when given the same test in L1 students did not perform better. Secondly, if students are not willing to notice and learn, there is no use in seeking the solution in the language preferred.

This study is limited to the time, setting and participants. It was conducted during a semester, in a state university and with some of the teachers. The outcomes could have been more diversified and comprehensive if pursued in different time slots, different universities both state and private as well as in different parts of Turkey and if included student interviews and more lesson observation.

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Appendix A.

A.1. Teacher interview questions

1. Could you describe your academic training and work experience relating them to your English learning process?
2. Could you describe a typical lesson of yours? In which parts of the lesson do you speak English?
3. What has changed since you first instructed a course in English? (language skills, student profile, setting)
4. What do you think about science education in L2? What are the advantages and disadvantages?
5. How do you go about collaborating with the language teachers? How could you collaborate?
6. What challenges have you been facing in the implementation of CBI? (L2 use, pronunciation etc.)
7. What do you expect from your students in relation to language use?
8. Do you think students are satisfied about being instructed in English?
9. How do you think the students benefit from learning in English?
10. How do you think language skills (reading, writing, listening, speaking) of the students develop through CBI? Which skills develop most?
11. What is the role of L1 in your classes? Under what circumstances do you and your students use L1?
12. Do you think the students learn the content just as well in English as they would in Turkish?
13. What kind of improvement do you observe in the foreign language skills of your students throughout the four years of education?
14. Can you give some information about the CBI implementation in other universities of your program?